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HUMAN NATURE AFTER DARWIN

Introductory remarks

Social scientists have always wanted to believe that the social sciences are 'true' sciences, just like the natural sciences. However, such a belief has never been fully justified. The social sciences have usually been descriptive rather than explanatory, and if they tried to be explanatory, the explanatory theories they provided either had a low predictive power or, if they had a high predictive power, predictions generated by these theories rarely passed empirical tests entirely satisfactorily. As a result, the social sciences possess few (if any) theories which can match natural sciences theories in terms of empirical corroboration and universal acceptance. Arguably, this mainly descriptive character of the social sciences has been due to the fact that *social scientists have not had at their disposal a solid view of human nature*. What is worse, many social scientists have believed that in order to work out such a view, no recourse to the natural sciences is needed. This belief is pernicious for the social sciences: arguably, the social sciences will never reach the status of 'true' sciences if they do not become open to developments in the natural (especially, biological) sciences – the only sciences which can provide a solid view of human nature. It should be observed, though, that this belief (which may be dubbed 'scepticism towards usefulness of biology in the social sciences' or, less politely, 'biophobia') was to some extent justified in the past when the biological sciences did not have very much interesting to say about human beings as social actors. However, recent developments in evolutionary biology and other biological sciences (for instance, neurobiology, behavioural genetics, primatology) seem to provide the underpinnings for a solid view of human nature, which should be interesting for social scientists and which should be allowed for by them in their research practice. The purpose of this essay is to present the main theses of this emerging view of human nature and the main controversies which have arisen around this view. I shall call this view 'Darwinian' because its main theses rest above all on evolutionary biology and the related evolutionary disciplines (for instance, evolutionary psychology and human behavioural ecology).

The Darwinian view of human nature

At the outset, let me briefly deal with two problems which one encounters in trying to reconstruct the biological – Darwinian – view of human nature. The first problem is definitional: what is a view of human nature? The second problem is related to the doubt if the biological sciences can be said to imply some view of human nature. As for the first problem: by 'a view of human nature' I shall understand a set of well-thought out and coherent answers to the following three questions: what is the structure of the human mind?; what is the nature of human morality?; what is the level of human rationality? Of course, one can offer alternative definitions of a view of human nature. However, the above definition seems to be at least acceptable, because a thus defined view of human nature says *very important* things about human beings (even if it does not say *all* of the important things about human beings). As for the second problem: it should be noticed that no scientific theory directly entails any view of human nature. Rather, a scientific theory can only provide a number of insights regarding human beings. However, these insights can be *interpreted* as endorsing some view of human nature. What follows, then, is an interpretation of insights provided by the biological sciences regarding human nature. This interpretation is aimed to render extant what view of human nature is supported by the biological sciences, i.e. what theses about the structure of the human mind, the nature of human morality and the level of human rationality these sciences seem to support.

Question 1: What is the structure of the human mind?

Thesis 1 of the Darwinian view of human nature: The human mind is not a blank slate – tabula rasa – upon which everything has to be written by environmental and cultural factors and can be written with equal ease: it is composed of built-in psychological dispositions – computational modules – shaped by natural selection which play a crucial role in shaping our behaviour.

Thus, the human mind consists of innate computational modules – psychological dispositions – and these modules are evolutionary adaptations, i.e. their presence can be accounted for by the fact that they enabled our ancestors to best cope with the problems they encountered in ancestral environments. These problems concerned, in general, survival and reproduction, and in particular, for example, finding mates, succeeding in intra-sexual competition, ensuring the certainty of paternity, deterring the adultery of one's sexual partner, detecting fraud in social exchange interactions) and thereby increased on average their chances of survival and reproductive success. It is often said that the view of the human mind proposed by evolutionary biologists is a form of 'evolutionary Kantianism' with regard to the problem of the existence of innate mental structures. This view assumes (like Kant) that our mental structures, by means of which we grasp the world and act in it, are innate, but (unlike Kant) it assumes that they are not apriorical (and thereby necessarily identical for all rational beings), but shaped in the process of natural selection (and thereby contingent). In sum, Thesis 1 of the Darwinian view of human nature is polemical to the view (called by evolution-

ary psychologists 'the Standard Social Science Model' and widespread especially among sociologists) that the human mind is almost entirely 'socially constructed' and thus extremely malleable.

Question 2: What is the nature of human morality?

Thesis 2 of the Darwinian view of human nature: Morality, at least in its simpler manifestations, is a biological adaptation: its building blocks (empathy, altruistic and cooperative dispositions, moral emotions such as, e.g. a sense of guilt, gratitude, elementary forms of a sense of justice) are the products of natural selection. Morality is, then, deeply embedded in our nature: it is a manifestation of our nature rather than a purely cultural phenomenon invented in order to counteract our purportedly egoistic and antisocial nature.

In order to clarify this thesis, it is useful to make recourse to the distinction made by the renowned primatologist Frans B.M. De Waal between two theories or views of human morality – morality as a veneer (the Veneer Theory) and morality as an outgrowth of our social instincts (the Social Instincts Theory). The Veneer Theory assumes that human morality is nothing more than a thin cultural overlay on our antisocial and egoistic nature. On this view, moral tendencies are not part and parcel of human nature and morality is a cultural innovation achieved by our species alone. Adherents of this theory were, e.g. Thomas H. Huxley and Sigmund Freud (especially in his *Das Unbehagen in der Kultur*). By contrast, the Social Instincts Theory assumes that human nature is social and altruistic and human morality is a natural outgrowth of our evolved social instincts that we share with many animals. These pro-social instincts (e.g. altruistic and cooperative dispositions, emotions that support these dispositions, empathy) are the building blocks of our morality. This account of human morality was defended, e.g. by Darwin and is defended by De Waal himself. In sum, Thesis 2 of the Darwinian view of human nature is polemical to the view of morality as a veneer.

Question 3: What is the level of human rationality?

Thesis 3 of the Darwinian view of human nature: Human beings are imperfectly rational.

Broadly speaking, there are two competing views of human rationality. One view assumes that human beings are perfectly rational. Agents are said to be perfectly rational if they maximize their utility functions (which implies that they correctly assess objective probabilities of their possible actions bringing about given states of affairs), discount their future utilities exponentially, employ low discount rates, and do not possess self-destructive desires. The opposite view says that human beings are imperfectly rational: they systematically violate at least one of the aforementioned conditions of perfect rationality. Now, apparently, the biological sciences support the view that human beings are imperfectly rational (at least in their current environments). This support seems to flow from two general and interrelated evolutionary insights regarding human rationality. The first insight is that *the human mind is not designed to seek for the truth as end in itself but to seek the truth only in so far as it helps to solve the adaptive*

problems. Given that the human mind is not a disinterested truth-seeker, one can expect that it will be prone to generating various illusions if this is the best way of solving a concrete adaptive problem. For instance, a well-established fact is that humans are prone to self-deception, i.e. to the unconscious concealing of information from themselves and thereby to distorting their picture of reality. It should be noted, though, that the evolutionary claim that the human mind is essentially practical is not inconsistent with the commonsense claim that it is equipped with a certain autonomy and thereby can be a tool of the disinterested pursuit of the truth and motivate us to take actions that oppose the imperatives of evolution – survival and reproduction. The second insight, related to the first and more directly relevant for the question about the level of human rationality, is *the adaptive-lag hypothesis* (called also 'the hypothesis of time-shifted rationality,' or 'the hypothesis of mismatch'). The hypothesis says that our psychological mechanisms, which were adaptive in ancestral environments (in which our psychological dispositions were being shaped), will frequently lead to maladaptive behaviours in our current environments, which are in many respects different from the ancestral environments. The mismatch between biological adaptations of organisms and later environments in which these adaptations have to operate is conceivable in all animals but it is particularly sharp in the case of humans because we have psychological mechanisms that were shaped for hundreds of thousands of years in ancestral environments and have not changed essentially since then. On the other hand, cultural evolution – a typically human process, made possible by our highly-developed brains – causes very considerable changes in our environments, making them look essentially different from ancestral environments. This hypothesis explains, for instance, why we often employ unreasonably high discount rates. We tend to do so because in ancestral environments steep discounting usually brought about much higher payoffs than the discounting we now consider to be rational. This was because in these environments people's time horizon was short (i.e. life expectancy was short) and the future was unreliable, so that there was not any strong selective pressure favouring the emergence of a propensity to defer the consumption of the goods with a view to increasing their quantity in the future. In sum, Thesis 3 of the Darwinian view of human nature is polemical to the view (especially widespread among economists) that human beings are perfectly rational. It may also be noted that Thesis 2 and Thesis 3, taken jointly, stand in opposition to the view of human being as *homo oeconomicus*, i.e. rational egoist.

Controversies surrounding the Darwinian view of human nature

An obvious problem with the three theses of the Darwinian view of human nature is that they are not sufficiently precise and thereby admit various interpretations. In this section I shall present the main controversies connected with each of these theses and two main interpretations of each of them.

Thesis 1

The claim that the human mind is modular and that its modules have been produced by natural selection is very plausible. Indeed, it seems that the best way of coping with the problems encountered by our ancestors in ancestral environments (and thereby the way to have the highest likelihood of having been preserved by natural selection) was not through some general, all-purpose, abstract problem-solving mechanism, but through a set of discrete and functionally specialized problem-solving mechanisms (they would function faster and more effectively than the general mechanism in confrontation with concrete problems). However, this view of the human mind is unclear in three main points. Firstly, there is no consensus among evolutionary biologists regarding the quantity of psychological modules in the brain – as yet no fully plausible taxonomy of these modules has been provided. Secondly, it is not clear how flexible these psychological modules are (for example, evolutionary psychologists do not make clear to what extent male sexual jealousy – one of those modules – can be 'reduced' by social learning). Thirdly, it is not clear whether the human mind is composed of only discrete and functionally specialized problem-solving mechanisms or whether it also contains some general, all-purpose, abstract problem-solving mechanism which extracts and combines information from different modules and deals with new adaptive problems. Taking into account these three points, we obtain two versions of Thesis 1:

Theses 1a: The human mind is composed of only domain-specific modules. These modules are numerous and rigid in their functioning, i.e. they can be modified by social learning to a small degree.

Thesis 1b: The human mind contains not only domain-specific modules but also a domain-general mechanism. These domain-specific modules are not numerous and are flexible in their functioning, i.e. they can be modified by social learning to a large degree.

As can easily be observed, Thesis 1 in its variant 1b becomes closer to the view of human nature as a blank slate.

Thesis 2

The view of morality as an extension of social instincts says only that we are moral by nature, i.e. that we are not egoistic or malicious or in some other way antisocial; it does not make precise what the *content* of our natural moral dispositions are. Accordingly, it is compatible with various, more specific views of human morality. Before I present two main views of this kind, I shall define three forms of altruism which I shall employ in this presentation, namely, kin altruism, reciprocal altruism and pure altruism. In the case of kin altruism an agent sustains high costs for the good of a relative without expecting the return of these costs in the future. In the case of reciprocal altruism, an agent sustains high costs for the good of an unrelated person expecting the return of these costs in the future. It should be noted that reciprocally altruistic acts driven are rather peculiar forms of acts: they are neither truly egoistic, because they involve sustaining some costs for other persons, nor truly altruistic, because they are not motivated by the con-

cern with the well-being of the other persons). In the case of pure altruism, an agent sustains high costs for the good of an unrelated person without expecting the return of these costs in the future. Now, relying on these three forms of altruism, one can distinguish two varieties of the view of morality as an extension of social instincts. The first variety says that human beings are *narrowly altruistic*, that is, they tend to manifest in many circumstances kin altruism and reciprocal altruism. The second variety says that human beings are *genuinely moral*, that is, they tend they tend to manifest in many circumstances kin altruism, reciprocal altruism *and pure altruism*. It is clear that evolutionary biology supports at least the view that human beings are narrowly altruistic. However, it is not clear whether it supports the second – more optimistic – picture of human morality. Most evolutionary biologists claim that evolution has not endowed us with the tendency to engage in purely altruistic acts: they maintain that such acts are just the maladaptive side-effects of kin altruism and reciprocal altruism. However, some scholars defend the claim that evolution has endowed us with such a tendency. They argue either that such a tendency is a product of sexual selection or that it is a product of group selection. According to the former explanation, the tendency to undertake purely altruistic acts may have evolved, even though it decreased the probability of survival of those who manifested it, if this tendency was for some reason attractive for the opposite sex and thereby increased the probability of mating and reproductive success. According to the latter explanation, genetic group selection may have favoured the tendency to undertake purely altruistic acts, the reason being that groups with many individuals endowed with this tendency and thereby inclined to sacrifice themselves for the group to which they belong are likely to fare better than and win over groups with individuals endowed only with the tendency to display kin altruism and reciprocal altruism. In sum, evolutionary biology does not say clearly if we are only kin and reciprocal altruists, or also pure altruists. Accordingly, we obtain two variants of Thesis 2:

Thesis 2a: Human beings are narrowly altruistic.

Thesis 2b: Human beings are genuinely moral.

Thesis 3

Evolutionary biology supports the view that human beings will systematically deviate from the requirements of perfect rationality. However, it is difficult to say how large deviations from these requirements human beings should be expected (in the light of evolutionary biology) to manifest. The difficulty stems from the fact that, on the one hand, the aforementioned general insights of evolutionary biology into human rationality support the view that human beings are imperfectly rational, but, on the other, evolutionary biology (especially, evolutionary psychology) has led to the reinterpretation of some psychological experiments purportedly demonstrating human imperfect rationality. A classic example is the Wason selection task, which is aimed at testing our understanding of the logical properties of sentences having the form of an implication. It has turned out that people have problems providing correct answers to the task if the implication has the form of a descriptive sentence, but they cope well with the task if the implication has the form of a norm regulating social exchange. More generally, evolution-

ary analysis has shown that various purported violations of the requirements of rationality are often not the effects of our cognitive defects and thereby should not be construed as attesting to human imperfect rationality. After all, they can often be interpreted as manifestations of the tendency of the human mind to use rational 'mental shortcuts' for making decisions (e.g. various heuristics) or as the effects of confronting subjects with artificial situations which they can never encounter in real life or with non-artificial situations but nonetheless having little significance for their survival and reproduction. Accordingly, many evolutionary theorists defend the view that human beings are 'ecologically rational,' that is, the view that human beings act rationally in practical situations, especially those situations which resemble contexts which could have been encountered in ancestral environments. The above remarks show that the evolutionary view of human rationality is more complex and less clear than Thesis 3 may suggest. Taking into account these remarks, it seems that one can distinguish two variants of this thesis:

Thesis 3a: Human beings are imperfectly rationally and their deviations from perfect rationality are large.

Thesis 3b: Human beings are imperfectly rationally but their deviations from perfect rationality are small (when viewed from the evolutionary perspective, many violations of perfect rationality prove to be apparent rather than real).

In sum, recent developments in the biological sciences have taught us that the human mind is not a blank slate, that human morality is embedded in our nature and that our rationality is not perfect. These general theses constitute what I have called 'the Darwinian view of human nature.' Unfortunately, the biological sciences, at the present stage of their development, cannot help in deciding unequivocally which of the presented interpretations of these theses are correct: they seem to admit of all these interpretations. Thus, the Darwinian view of human nature is still not fully determinate. Once can hope that this situation will change in the future as a result of the progress in the biological sciences. It seems, though, that even in their general form these theses are illuminating and can be regarded as providing the foundations of a solid view of human nature.